AD-4430B

Ultra compact weighing module for use in unstable weighing environments

Specifications

■Analog unit

Input sensitivity	Over 0.15μV/d (d=minimum division)
Zero adjustment range	−35mV to +35mV (−7mV/V to +7mV/V)
Load cell excitation	DC5V±5%, 60mA Remote sensing function included Up to 4 load cells (350Ω) can be connected
Temperature coefficients	Zero; ±0.02μV/˚C (Typ.) ±0.1μV/˚C (Max.) Span; ±3ppm/˚C (Typ.) ±15ppm/˚C (Max.)
Nonlinearity	0.005% of F.S.
Input noise	Less than 0.3μVp-p
Maximum measurement voltage	−35mV to +35mV (−7mV/V to +7mV/V)
Input impedance	Over 10MΩ
A/D conversion method	Delta-sigma modulation
Internal resolution	Approx. 16,000,000
Display resolution	99,999d (less than 20,000d recommended)
Sampling speed	1000 times/sec.
Calibration	Actual load calibration or digital span calibration not using actual load

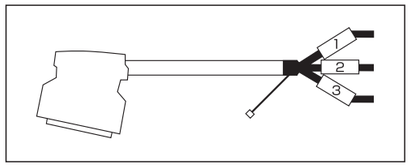
■Digital unit

Display elements	Weighing display: 7-segment 5-digit red LED Character height of 5.3mm Polarity display: 1 red LED Situational display: 6 red LEDs
Measurement data display	Display switchable between net and gross weight Display range: 0 to 99,999 (Select between 1, 2, 5, 10, and 50 for minimum division "d")
Status display	GROSS, NET, HOLD, STABLE, ZERO and a light which can be given a custom function by the user

■External input/output

BCD input/output (open collector)
Main unit connector shape: IEEE1284 half pitch (MDR) female 36 pin

●Suggested connection cable
Manufactured by Misumi Electronics Corporation
Model number: SHPT-HBT-SB-36-1 (1m)



■General specifications

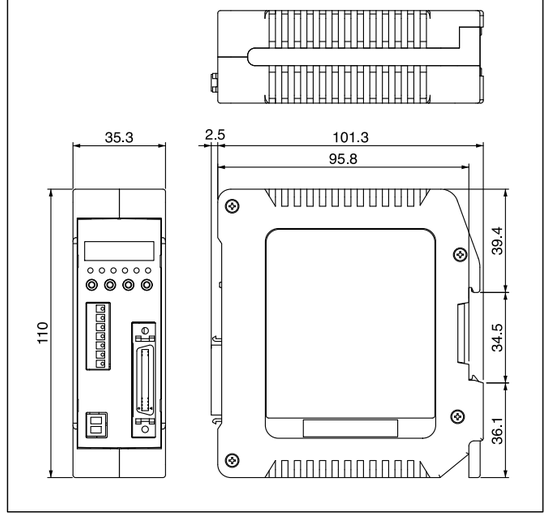
Power supply voltage	DC24V
Power consumption	Approx. 6W
Operating temperature and humidity	−10˚C to 50˚C/85%RH or less (Condensation must be avoided)
External dimensions	35(W) × 110(H) × 101(D) mm
Attachment method	DIN rail mount
Weight	Approx. 180g

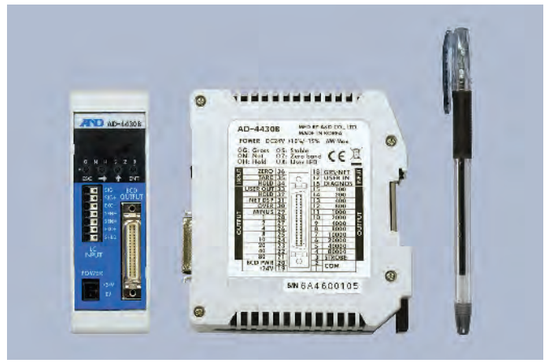
■Standard accessories

Basic instruction manual, power supply connector
(a detailed instruction manual can be downloaded from our homepage)

External dimensions

Unit: mm





Appearance and/or specifications subject to change for improvement without notice.

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✻ AD4430B-ADCC-01-ZW1-13a03

Ultra compact weighing module for use in unstable weighing environments

AD-4430B

High speed sampling - 1000 times per second
BCD output - 1000 times per second

Actual size

- *DIN rail mounted type ideal for insertion into control board*
- *Powerful vibration-cancelling function (High Performance Digital Filter)*
- *High speed sampling (1000 times per second) - High accuracy*
- *BCD input/output a standard feature (up to 1000 times/sec high speed output)*
- *Load cell connection failure diagnosis function*
- *Equipped with powerful noise suppression circuit*
- *Accurate linear correction function using high-order equations*
- *Equipped with averaging hold, peak hold and comparator functions*

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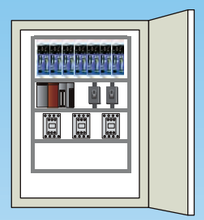
High Performance Digital Filter

Featuring the High-Performance Digital Filter (HPDF) for Environments with Vibration Issues

The High-Performance Digital Filter provides high accuracy/high speed weighing in environments with vibration problems.
It greatly reduces the costs and maintenance required for anti-vibration equipment since it copes with vibrations without requiring many mechanical measures. What's more, conducting weighing while applying vibrations, once an extremely difficult task, is now possible.



AD-4430B

High speed sampling - high speed data output

High speed sampling of 1000 times/sec has been achieved, and with BCD output (a standard feature) can be outputted at a maximum speed of 1000 times/sec.

DIN rail mounted type for insertion into control board

Can now be easily mounted onto the DIN rail of the control board with the groove and hook on the rear side of the AD-4430B.

Load cell connection diagnosis function

The AD-4430B can check for disconnections or incorrect wiring in the connection between itself and the load cell.
This can be a convenient check when installing or during regular inspections.

** All incorrect wiring may not be be able to be diagnosed in some cases, as some load cells may be used for both tension and compression by interchanging SIG+ and SIG–.*

Input/Output selection

At the BCD input/output terminal it is possible with the internal settings to assign a selection function.
(input: 1 point; output: 1 point)

Comparator function

Maximum and minimum values can be set, and at the BCD input/output terminal one of HI, OK or LO output selections can be assigned with the internal settings.

Hold function

Peak hold, averaging hold and normal hold functions can be set.
Using HPDF and peak hold creates a simple checker, and by using averaging hold, unstable items can be measured.

Linearity correction function

Equipped with a high precision linearity correction function using high order expression.

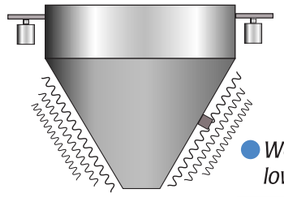
Additional functions

Zero band detection function, zero tracking function, power on-zero function, gravity acceleration correction.

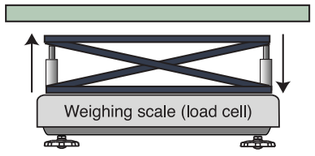
Examples of use of the vibration-cancelling High Performance Digital Filter (HPDF)

Using HPDF

Weighing while inducing vibration



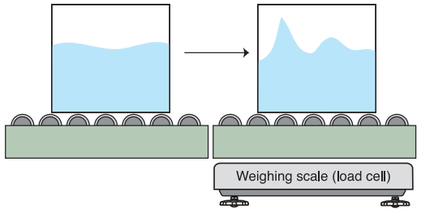
Weighing while raising and lowering



Using HPDF with averaging hold

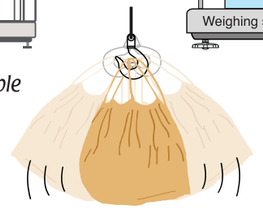
Weighing unstable objects

When containers with liquids are moved on a rolling conveyor with built-in weighing scale, the moment of inertia transferred after stopping the movement means the liquid inside will take a long time to settle and weighing cannot be performed for some time. However, if HPDF with averaging hold is used weighing can be performed instantly. Furthermore, if comparator output is used, the scale can immediately judge whether the measurement is within or outside range and output judgement.

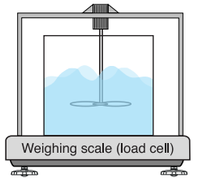


Body weight measurement of animals moving about vigorously

Weighing unstable objects



Weighing while mixing



Using HPDF with peak hold

Simple checkweigher

A checkweigher (which measures an object while it continues to move) can be created.
When the weight exceeds a value outside the zero band, the peak hold function starts, and is released by a timer.